Optional Job-Time Filesystem Related Directives

This article describes optional AWS Cloud directives to use in addition to those for creating a job-time filesystem and those used for transferring files between S3 and a job-time filesystem.

- **-volume_include**

  By default, jobs will not have persistent, shared /home and /nobackup filesystems mounted if there are any **â volume_type** directives given. Without a persistent /home filesystem mounted, you will get an empty /u/username directory as part of the root filesystem on the node.

  The **-volume_include** option can be used to indicate that you want to have the persistent /home and/or /nobackup mounted as normal.

  ```
  #CLOUD -volume_include=home
  #CLOUD -volume_include=nobackup
  ```

  Important: If the persistent /home or /nobackup filesystems are mounted, those two paths are not available as a mount destination for job-time filesystems.

  The **-volume_include** directive, together with **â stagein_file/dir** and **â stageout_file/dir** used to stage in/out files between Pleiades and AWS can be placed above the first **â volume_type** directive.

- **-volume_home_{bashrc,profile,login,cshrc}**

  ```
  #CLOUD -volume_home_bashrc=local_file
  #CLOUD -volume_home_cshrc=local_file
  #CLOUD -volume_home_profile=local_file
  #CLOUD -volume_home_login=local_file
  ```

  These directives will take the given file in the current directory (i.e., $PBS_O_WORKDIR) and make it the ~/.bashrc (or .cshrc, .profile, .login, depending on which specific directive is used) to be automatically sourced under $HOME at job startup for all instances. In the event there isn't an existing persistent shared /home used, the .bashrc will be placed under each instance's empty /home under the root filesystem. This will allow some control over the environment for things that can't be set in the PBS script (i.e., variables on the nonâ headnode).

  These directives can be placed above the first **â volume_type** directive.

  Note: The default shell is bash unless you have requested changing it. If you want to use csh and have the .cshrc sourced in a PBS job, add the following to the beginning of your PBS script:

  ```
  #PBS -S /bin/csh
  ```

- **-volume_primary**

  In the event that there are multiple filesystems mounted in a job, you can use this directive to toggle a filesystem on as the source and destination for **â get_file**, **â put_file**, **â stagein_file/dir**, and **â stageout_file/dir,** and also to create a softlink for $PBS_O_WORKDIR to the following primary filesystem:

  ```
  #CLOUD -volume_primary
  ```

  This directive should be placed anywhere before the specification of the next filesystem block that starts with **â volume_type**.

However, if a persistent /nobackup filesystem is mounted, it is set as the primary regardless of whether any job-time filesystem has **-volume_primary** set. Conversely, a persistent /home filesystem cannot be set as primary.

If more than one job-time filesystem is specified as the primary, the first one specified with **â volume_primary** is chosen.

If there is no user-indicated primary, the system picks the first one that exists in this order:

```
shared
lustre
headnode_shared
headnode
node=X
local
ephemeral
```

For example, the following specification will result in *shared_1* as the chosen primary.

```
#CLOUD -volume_type=headnode
#CLOUD -volume_mount=/data
..
#CLOUD -volume_type=shared
#CLOUD -volume_mount=/shared_1
..
#CLOUD -volume_type=shared
#CLOUD -volume_mount=/shared_2
```

- **-volume_list** and **-volume_delete**

These two options can be used to see the contents and to remove, if desired, any previously 'put' filesystems. They can be placed anywhere after the #PBS directives.

```
#CLOUD -volume_list=s3_folder_to_list
#CLOUD -volume_delete=s3_folder_to_remove
```

The **-volume_list** and **-volume_delete** operations occur after the execution of the PBS script. Read this article for more information.